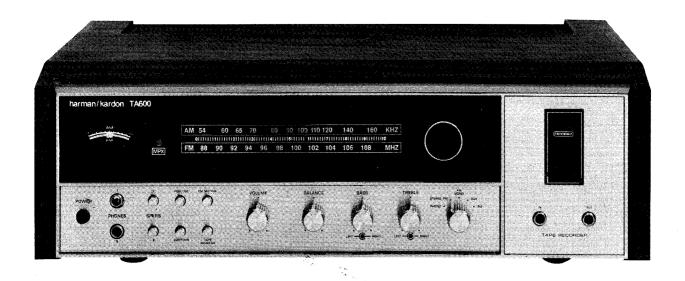
# The Harman/Kardon Model TA600

### AM/FM/Stereo FM Solid State Receiver

## Technical Manual



harman/kardon

#### **PRECAUTIONS**

- 1. Always disconnect the chassis from power line when soldering. Turning the power switch OFF is not enough. Power line leakage passing through the heating element may destroy the transistors.
- 2. Never attempt to do any work on the transistor amplifiers without first disconnecting the AC line cord and waiting until the power supply filter capacitors have discharged.
- 3. Replacement for output and driver transistors, if necessary, must be made from the same beta group as the original type.
- 4. If one output transistor burns out (open or short) always remove all the output transistors in that channel and check the bias adjustment, the control and other parts in the network with an ohmmeter before inserting a new transistor. All transistors in one channel will be destroyed if the base biasing circuit is open on the emitter end.
- 5. When mounting a replacement power transistor, be sure that the bottom of the flange, the mica insulators and the surface of the heat sink are free of foreign matter, for they may cause transistor failure.
- 6. Silicon grease must be applied between the transistor and the mica insulator, and between the mica insulator and the heat sink for better heat conduction.
- 7. Fuses must be replaced with size and type indicated. Use of other types can expose components to destructive current levels.

#### **ALIGNMENT PROCEDURES**

#### **FM ALIGNMENT PROCEDURE**

FM Signal Generator, Distortion Analyzer, AC Voltmeter INSTRUMENTS:

Set Function Switch to FM MONO, Signal Generator for 400 or 1000 Hz 100% mod. Connect Signal Generator to FM 300 $\!\Omega$  ANTENNA terminals. NOTE:

Connect Distortion Analyzer and Al Voltmeter to Tape 1 Left Out

Step	FREQUENCY	SIG. STRENGTH	DIAL SETTING	ADJUST	FOR	AT
1	100 MHz	1000μν		Tuning knob	Maximum output	TAPE 1 LEFT
2	Same as above	Same as above		Dial pointer	100 MHz	FM Dial scale
3		petween pin 11 AM/FM b -3db limiter saturation i				
4	106 MHz	—3db of limiter saturation	Tune for signal at maximum tape output	If slug in front end	Least noise and maximum signal out	TAPE 1 LEFT
5	Same as above	Same as above	Same as above	FM trimmers in front end TCA & TCR	Same as above	Same as above
6	Repeat steps 4 ar	nd 5 until no further impr	ovement is noticed.			
7	Disconnect RF in	put	Quiet point on band	Bottom slug of T103	Center	Tuning meter
8	98 MHz	1000μν	Tune for center of tuning meter	Top slug of T103	Least THD	TAPE 1 LEFT
9	Repeat steps 7 ar and 1000 v inpu	nd 8 until tuning meter is ut.	centered with no signal ar	oplied, and there is leas	t THD with meter center	ed
10	Same as above	-3db of limiter saturation	Same as above	If slug in front end	Least THD	TAPE 1 LEFT
11	Remove jumper	from pin 11 AM/FM boar	d and ground			
12	Same as above	Same as above	Same as above	VR101	Same as above	Same as above

#### MPX ALIGNMENT PROCEDURE

Frequency Counter, AC Voltmeter with Set Level Control, Stereo FM Generator **INSTRUMENTS:** 

Set Function Switch to Stereo FM NOTE:

Step	FREQUENCY	SIG. STRENGTH	DIAL SETTING	ADJUST	FOR	AT
1	98 MHz Stereo 9% Pilot	30µv 100% mod 9% Pilot	Tune to 98 MHz	VR102 AM/FM	MPX indicator lights	at this level
2	Same as above	1000μν	Same as above with Function Switch at FM MONO	L406 MPX	75 kHz on frequency counter (step 2 only)	Pin 16 of U401
3	98 MHz Left chanel modulation	Same as above	Tune to 98 MHz	Set Odb on AC Vo	ltmeter	TAPE 1 LEFT
4	Same as above	Same as above	Same as above	VR401	Minimum and record -db	TAPE 1 RIGHT
5	98 MHz right chanel modulation	Same as above	Same as above	Set Odb reference	on AC VTVM	Same as above
6	Same as above	Same as above	Same as above	VR401	Halfway between current reading and reading in step 4	TAPE 1 LEFT

#### **AM ALIGNMENT PROCEDURE**

**INSTRUMENTS:** 

SSG, modulated with 400Hz at 30%, V.T.V.M., AM IF Sweep Generator, and Oscilloscope.

NOTE:

Set Function Switch to AM.

Connect signal source to a loop placed to radiate signals into AM ANT LOOP STICK.

Step	SIGNAL SOURCE OUTPUT	CONNECT OUTPUT METER TO	DIAL SETTING	ADJUST	ADJUST FOR	
1	455kHz of sweep	V.T.V.M. & oscliio-	Quiet point near	L101	Maximum and symmetrical	
2	generator	scope to TAPE OUT	1600kHz	T101, input side	pattern on SCOPE	
3				T101, output side		
4	Repeat step 1 through 3 for best sensitivity and symmetrical pattern on oscilloscope.					
5	525kHz of S.S.G.	V.T.V.M. to TAPE OUT 1 and distortion	Gang fully closed	L101		
6	1700kHz of S.S.G.	meter together with oscilloscope to speaker out	Gang fully opened	AM oscillator trimmers TC1 & TC2	Maximum output	
7	Repeat step 5 and 6 fo	or best sensitivity				
8	600kHz of S.S.G.	Same as above	600kHz	AM ANT LOOP STICK	Same as above	

#### STEREO POWER AMP IDLING CURRENT ADJUSTMENT

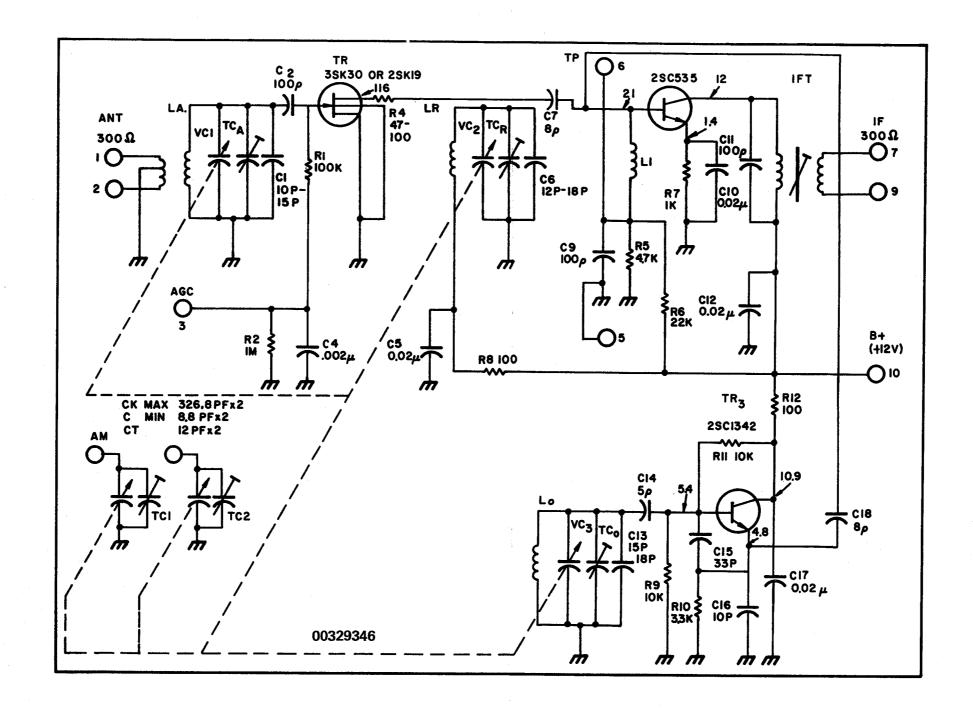
INSTRUMENT:

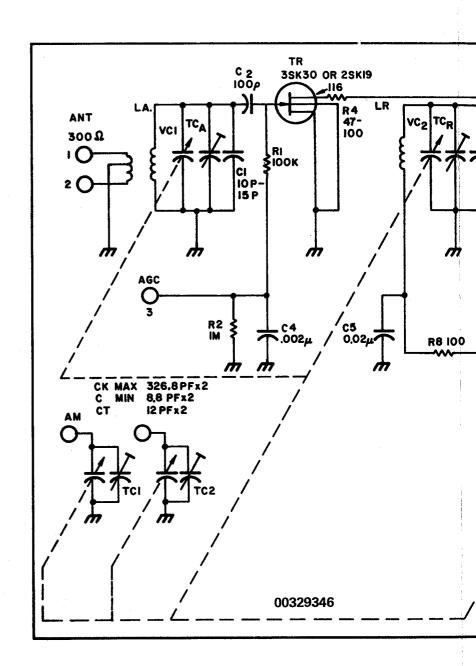
DC Voltmeter (Set when unit is cold)

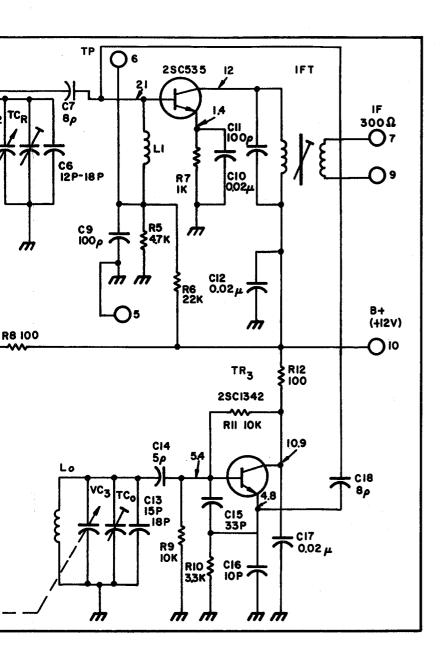
NOTE:

Set VOLUME control at minimum

Step	DC VOLTMETER CONNECTION	ADJUST	FOR	AT
1	Between TP2 and TP 4	VR1	25mV	Voltmeter
2	Repeat step 1 on other channel	Same as above	Same as above	Same as above







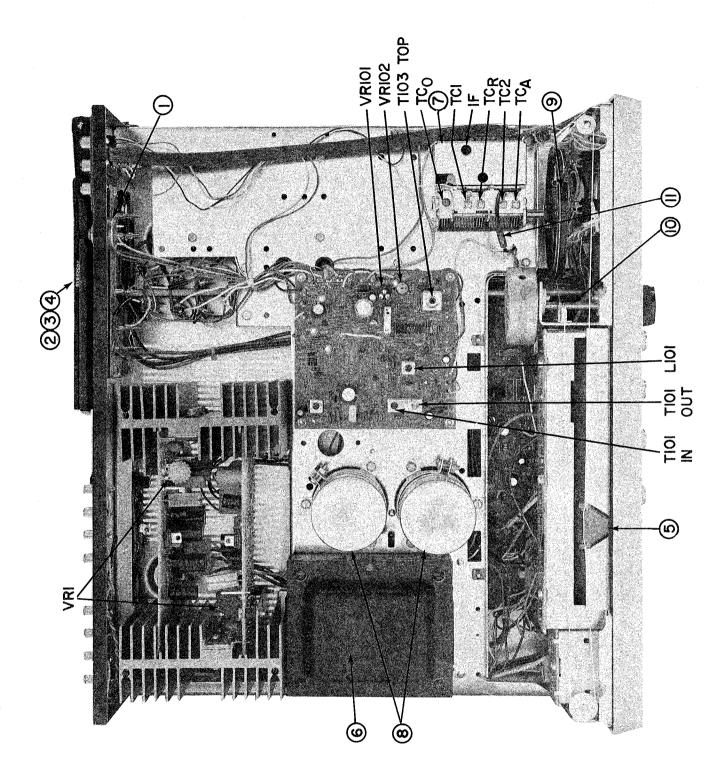


FIG. I TOP VIEW

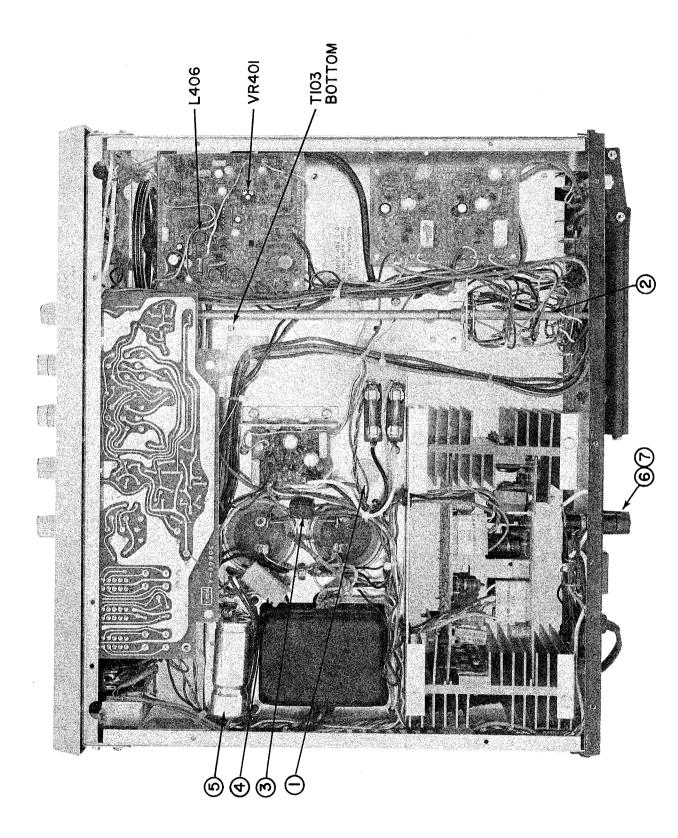


FIG. III BOTTOM VIEW

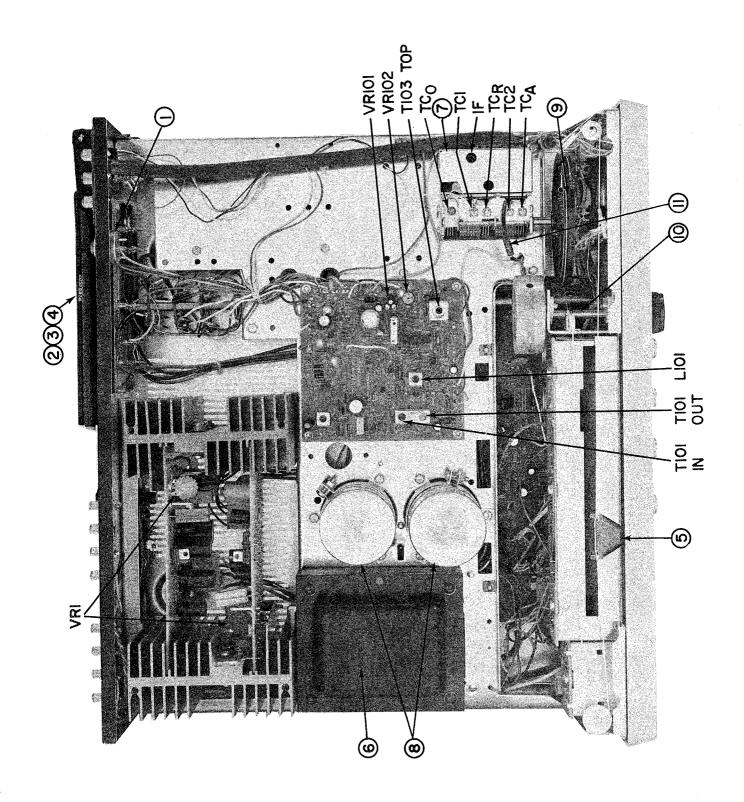


FIG. I TOP VIEW

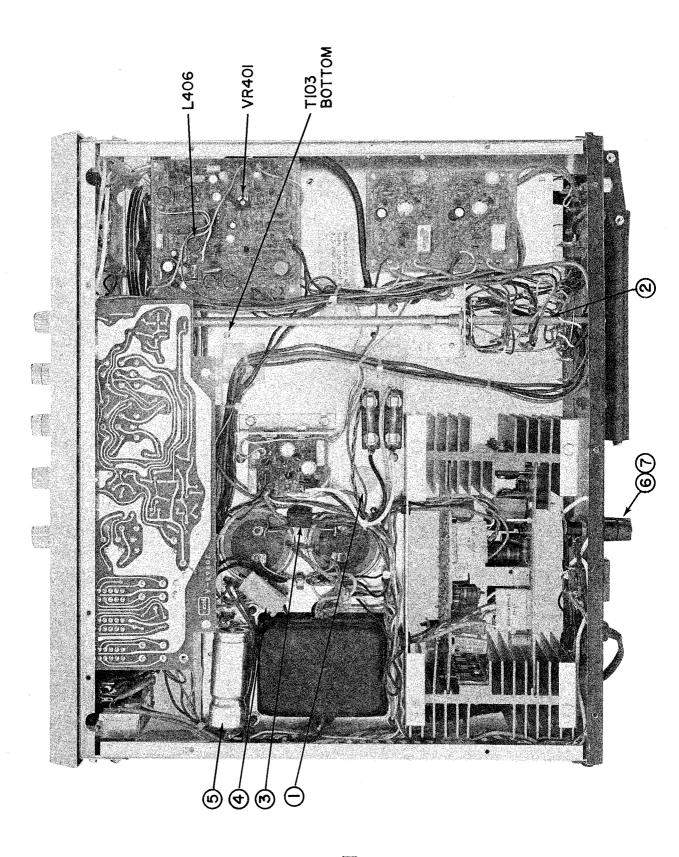
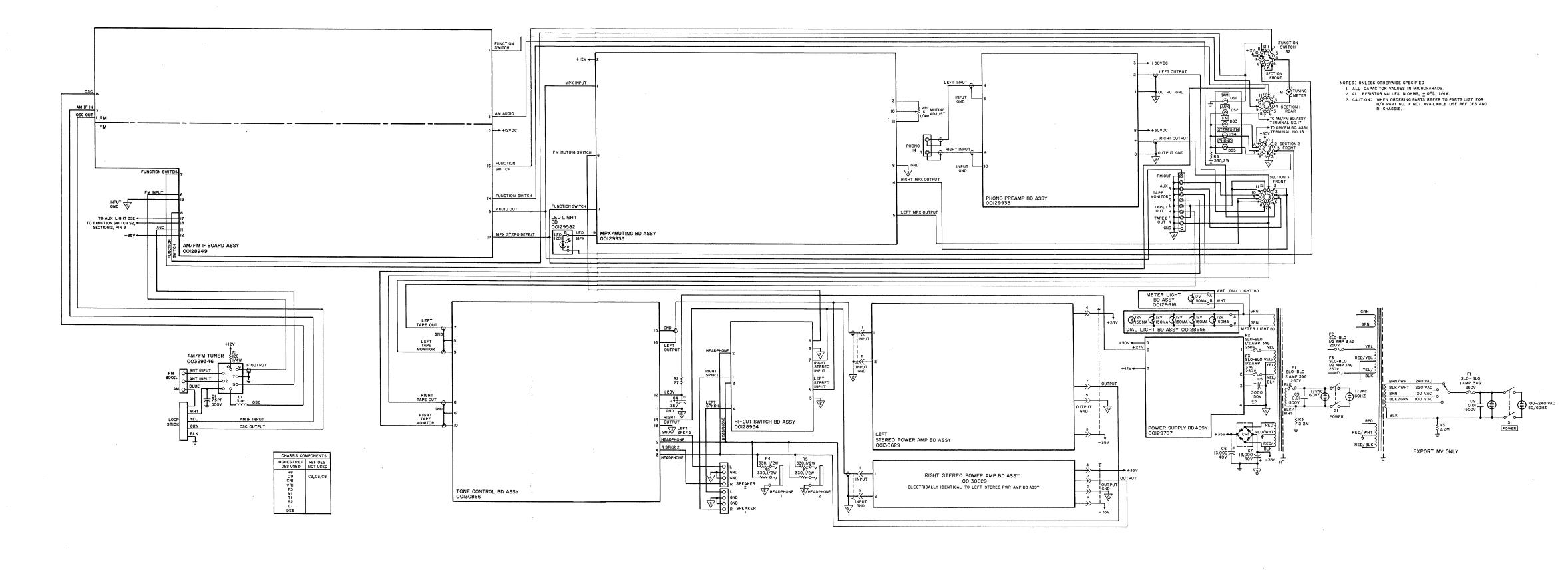
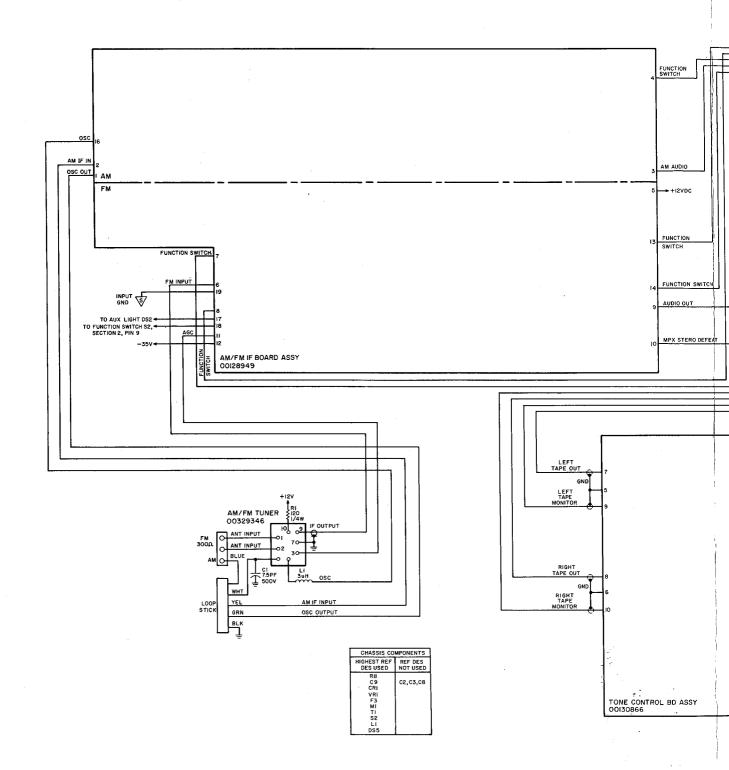
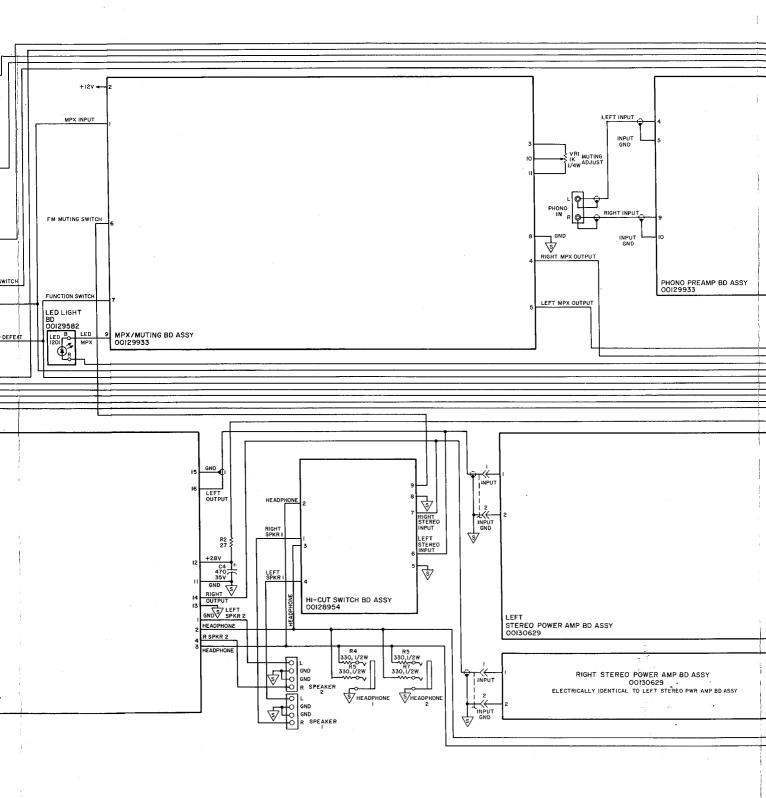
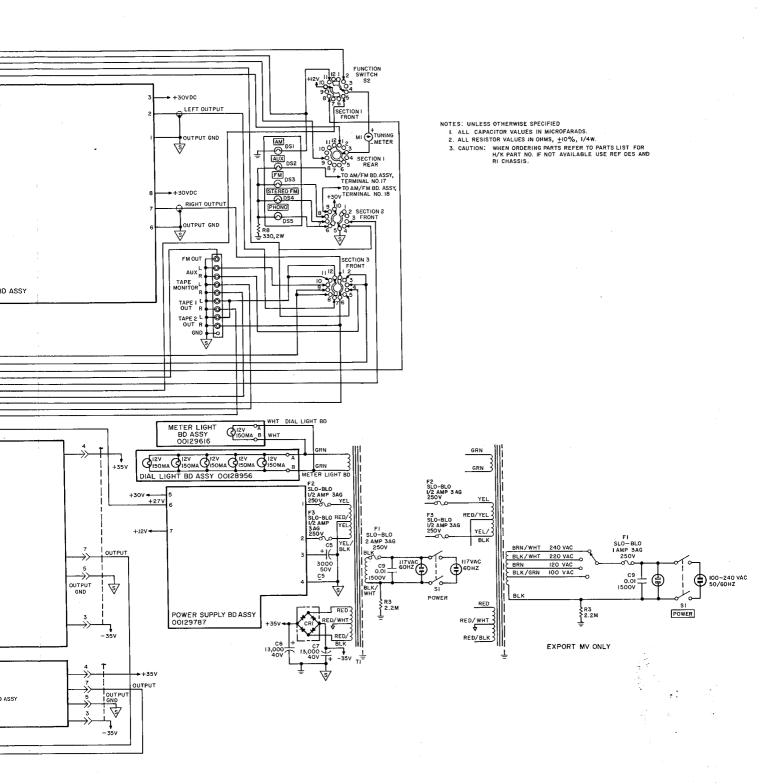


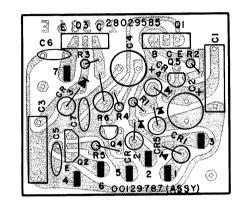
FIG. **II** BOTTOM VIEW











CIRCUIT REF. NO. H/K PART NO. DESCRIPTION 00129787 PC Bd Assy, Power Supply CAPACITOR, LYTIC C2, 4 31819156 50UF, 35V DIODE CR1, 2, 4 41029089\* 2 Amp, 200 PIV CR3 42029340\* Zener, 12.6V, 1W, 10% CR5 42029676\* Zener, 1N4751, 30V, 1W, 10% **TRANSISTOR** 43029710\* NPN Pwr Silicon Q1 43029387\* **Q2** NPN Pwr Silicon **Q3** 43029550\* NPN Pwr Silicon

43025972\*

Q4, 5

NOTES: UNLESS OTHERWISE SPECIFIED

- ALL CAPACITOR VALUES IN MICROFARADS.
   ALL RESISTOR VALUES IN OHMS, ±10%, 1/4 W.
- 3. POWER SUPPLY BD ASSY 00129787

A. MEASUREMENT INFORMATION

METER: WESTON MODEL NO. 4 4 4 4 DVM

MEASUREMENT TOL ±10%

B. UNIT CONTROL AND SWITCH POSITIONS: SPEAKER SWITCHES 1 & 2-ON (IN) POSITION.

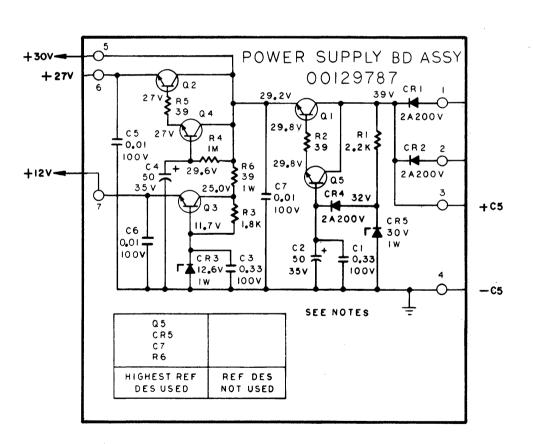
HIGH CUT, FM MUTING, CONTOUR AND TAPE MONITOR

SWITCHES-OFF (OUT) POSITION. VOLUME CONTROL-FULL CCW.

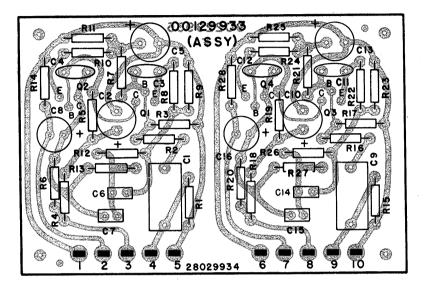
BALANCE, BASS AND TREBLE CONTROL—CENTERED. FUNCTION SWITCH MODE—PHONO.

4. CAUTION: WHEN ORDERING PARTS REFER TO PARTS LIST FOR

H/K PART NO. IF NOT AVAILABLE USE REF DES AND ASSEMBLY USED ON. IE RI POWER SUPPLY BOARD 00129787

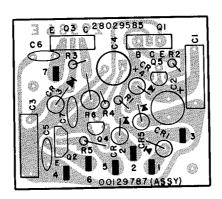


PHONO PREAMP PC BOARD, SCHEMATIC



CIRCUIT REF. NO. H/K PART NO. DESCRIPTION 00129933 PC Bd Assy, Phono Preamp CAPACITOR, LYTIC 100UF, 16V C2, 5, 10, 13 31819180 31819165 10UF, 35V C8, 16 TRANSISTOR Q1, 2, 3, 4 43028535\* Hitachi 2SC1344E

NPN GP



CIRCUIT REF. NO.	H/K PART NO.	DESCRIPTION
	00129787	PC Bd Assy, Power Supply
CAPACITOR, LYTIC C2, 4	31819156	50UF, 35V
DIODE CR1, 2, 4 CR3 CR5	41029089* 42029340* 42029676*	2 Amp, 200 PIV Zener, 12.6V, 1W, 10% Zener, 1N4751, 30V, 1W, 10%
TRANSISTOR Q1 Q2 Q3 Q4, 5	43029710* 43029387* 43029550* 43025972*	NPN Pwr Silicon NPN Pwr Silicon NPN Pwr Silicon NPN GP

1. ALL CAPACITOR VALUES IN MICROFARADS.

2. ALL RESISTOR VALUES IN OHMS,  $\pm 10\%$ , 1/4 W.

3. POWER SUPPLY BD ASSY 00129787

A. MEASUREMENT INFORMATION

METER: WESTON MODEL NO. 4 4 4 4 DVM

MEASUREMENT TOL ±10%

B. UNIT CONTROL AND SWITCH POSITIONS:

SPEAKER SWITCHES 1 & 2-ON (IN) POSITION. HIGH CUT, FM MUTING, CONTOUR AND TAPE MONITOR

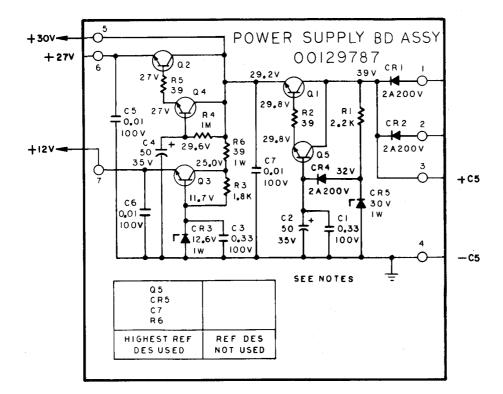
SWITCHES-OFF (OUT) POSITION.

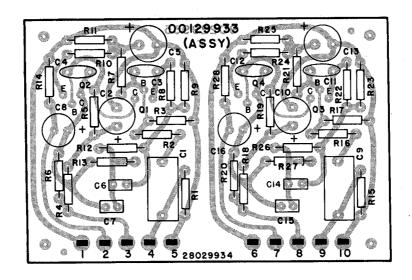
VOLUME CONTROL-FULL CCW.

BALANCE, BASS AND TREBLE CONTROL-CENTERED.

FUNCTION SWITCH MODE-PHONO.

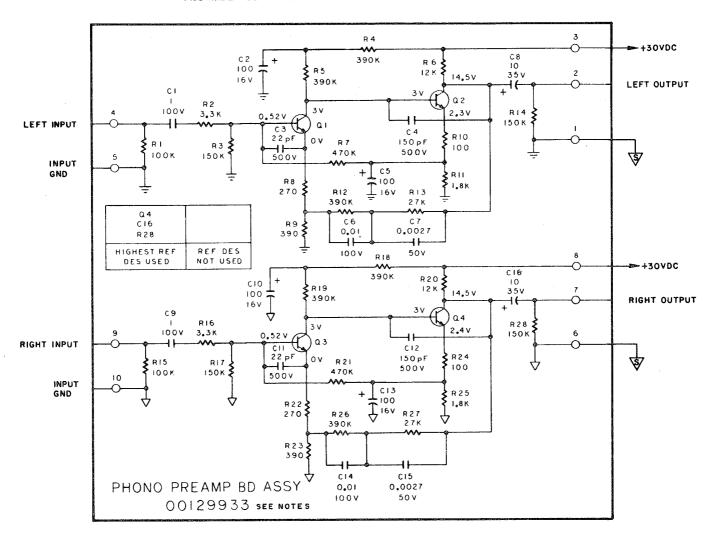
4. CAUTION: WHEN ORDERING PARTS REFER TO PARTS LIST FOR H/K PART NO. IF NOT AVAILABLE USE REF DES AND ASSEMBLY USED ON. IE RI POWER SUPPLY BOARD 00129787



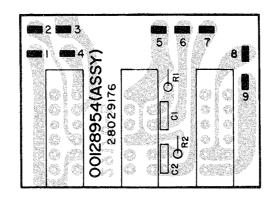


CIRCUIT REF. NO.	H/K PART NO.	DESCRIPTION
	00129933	PC Bd Assy, Phono Preamp
CAPACITOR, LYTIC C2, 5, 10, 13 C8, 16	31819180 31819165	100UF, 16V 10UF, 35V
TRANSISTOR Q1, 2, 3, 4	43028535*	Hitachi 2SC1344E

- 1. ALL CAPACITOR VALUES IN MICROFARADS
- 2. ALL RESISTOR VALUES IN OHMS,  $\pm 10\%$ , 1/4~W
- 3. CAUTION: WHEN ORDERING PARTS REFER TO PARTS LIST FOR H/K PART NO. IF NOT AVAILABLE USE REF DES AND ASSEMBLY USED ON. IE RI PHONO PREAMP BOARD 00129933



#### HI-CUT SWITCH BD PC BOARD, SCHEMATIC



**CIRCUIT REF. NO.** 

H/K PART NO.

**DESCRIPTION** PC Bd Assy.

00128954

Hi Cut, FM Muting, Spkr 1 Switch

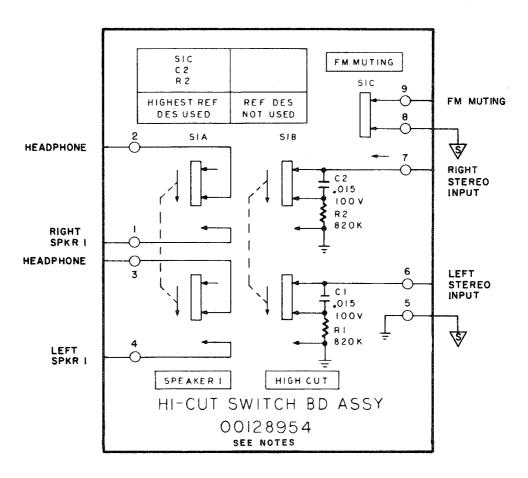
**SWITCH** 

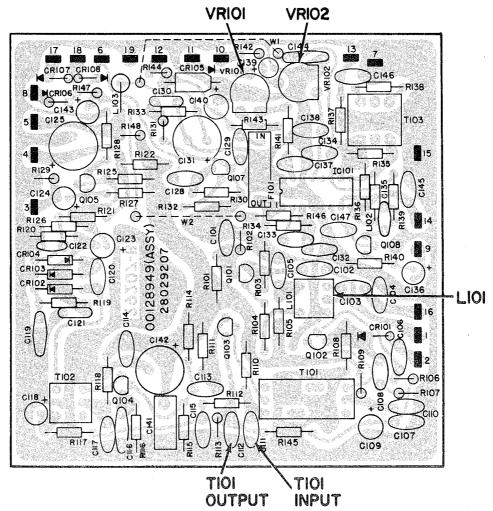
S1

25028939

Pushbutton, 4PDT

- 1. ALL CAPACITOR VALUES IN MICROFARADS
- 2. ALL RESISTOR VALUES IN MICROFARADS
- 3. CAUTION: WHEN ORDERING PARTS REFER TO PARTS LIST FOR H/K PART NO. IF NOT AVAILABLE USE REF DES AND ASSEMBLY USED ON. IE RI HI CUT SWITCH BOARD 00128954

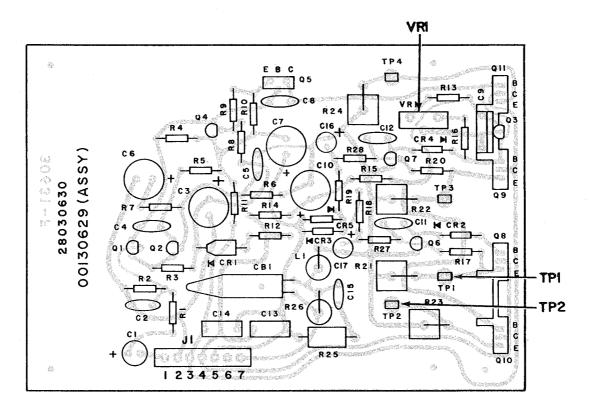




CIRCUIT REF. NO.	H/K PART NO. 00128949	DESCRIPTION PC Bd Assy.	CIRCUIT REF. NO.	H/K PART NO.	DESCRIPTION
		AM/FM IF	TRANSISTOR	40005070*	NIDALOD
CAPACITOR, LYTIC			Q101-105, 108 Q107	43025972* 43029701*	NPN GP NPN RF
C109, 118 C123, 124, 143	31819155 31819176	50UF, 10V 10UF, 25V	INDUCTOR		
C125	31819185	470UF, 10V	L101	12028753	Oscillator
C131	31818792	100UF, 35V	L102	12029342	22UH, ¼W, ±5%
C136, 140	31819178	22UF, 16V	L103	12029678	3.3UH
C139	31819157	1UF, 50V	T101	12028754	Filter, IF
C142	31827096	250UF, 16V	T102	12028755	Detector
			F101	12029386	Filter, Ceramic,
POTENTIOMETE	R				Murata SFW
VR101	21729324	10K PIHER PT10			10.7MA
VR102	21729331	50K PIHER PT10	TRANSFORMER		
			T103	11029332	Quadrature
DIODE					FM Detect
CR101 - 104	41529814*	1N541	INTEGRATED		
CR105	42029340*	Zener 12.6V, ±10%	CIRCUIT		
CR106 - 108	41629338*	1N914	IC101	43129341*	CA3089

MPX STEREO DEFEAT -+12VDC FUNCTION FUNCTION SWITCH AM AUDIO FUNCTION AUDIO OUT ₽ģ + C142 222. 24.50 24.50 1144 AM/FMIF BOARD ASSY 3.3 LH 00128949 8129 10 K 22 22 16Y C123 0 + 16 25V + 1 4 70 + 10.00 10.00 10.00 C119 C121 R120 C 8.27 ₹ 0.108 ¥0.9 CR103 C122 R125**♦** 100 4.8V 8.40 6 ± 8126 0446 1000 22K 220PF 8136 6.8K 1103 8:42 2:2× ±685 +1€50 + 65.7 8118 .0138 100V 3089 000 v # # # ¥ C144 100 V C133 5 0 0 ₽.E.ē 330 3.9K CI34 .01 \*;\* C132 5.1 R113 A110 75× C13/ 100 35 V 8.43 22.K R133 ٥ 1. ALL CAPACITOR VALUES IN MICROFARADS
2. ALL RESISTOR VALUES IN OHMS, ±10%, 1/4 W
3. CAUTION: WHEN ORDERING PARTS REFER TO PARTS LIST FOR H/K PART NO. IF NOT AVAILABLE USE REF DES AND ASSEMBLY USED ON. IE RI AM/FM BOARD 00128949 8145 2.2K R132 330 88.30 88.30 25.5 C140 22 16V CR105 ▼ 12.6v 0.00 200 RI08 560 05.00 10.00 R 147 33 80.00 10.00 R106 Ci07 1000 CRIDE 2010 101 C105 .047 100V ۷ ۷ ∑ i⊥ RIO5 FM INPUT INPUT GND FUNCTION FUNCTION SWITCH AUX LIGHT FUNCTION SWITCH AGC -35∨ C126,C127 R123,R124 REF DES NOT USED 470PF VR102 ₩2 ICIQI L103 F101 HIGHEST REF DES USED 47.4 7103 0108 CRIO8 C147 R148 010 10 00 11 000 11 000 AM IF IN OSC OUT osc

## STEREO POWER AMP BOARD, LEFT & RIGHT PC BOARD, SCHEMATIC



CIRCUIT REF. NO.	H/K PART NO.	DESCRIPTION
	00130629	PC Bd Assy. Stereo Pwr Amp
CAPACITOR, LYTIC		
C1 ,	31819148	10UF, 50V
C3, 7, 10	31830565	50UF, 50V
C6	31819185	470UF, 10V
C16, 17	31819165	10UF, 35V
RESISTOR		
R21, 22, 23, 24	36711071	1 Ohm, 5W, $\pm$ 10%, Wirewound
VR1	21629833	500 Ohm, ±20% Variable, PIHER PT15 YB
DIODE		
CR1	41029089*	2 Amp, 200 PIV
CR2, 4	41629338*	1N914
CR3, 5	41529814*	1N541
TRANSISTOR		
Q1, 2, 7	43027722*	PNP GP
O3	43029832*	MPS-A13
Q4, 6	43025972*	NPN GP
Q5	43029387*	NPN Silicon Power Driver
Q8, 10	43029037*	NPN Power Darlington
Ω9, 11	43029038*	PNP Power Darlington
INDUCTOR		
L1	12029551	Wound on 10 Ohm, 1W Resistor
CIRCUIT BREAKER		
CB1	45524399	Sylvania MB316

- 1. ALL CAPACITOR VALUES IN MICROFARADS.
- 2. ALL RESISTOR VALUES IN OHMS, ±10%, 1/4 W.
- 3. SET VRI, 500 OHM POT, FOR 25mVDC BETWEEN TP1 & TP4
- 4. MEASUREMENT INFORMATION

SPEAKER SWITCHES 1 & 2-ON (IN) POSITION.

HIGH CUT, FM MUTING, CONTOUR AND TAPE MONITOR

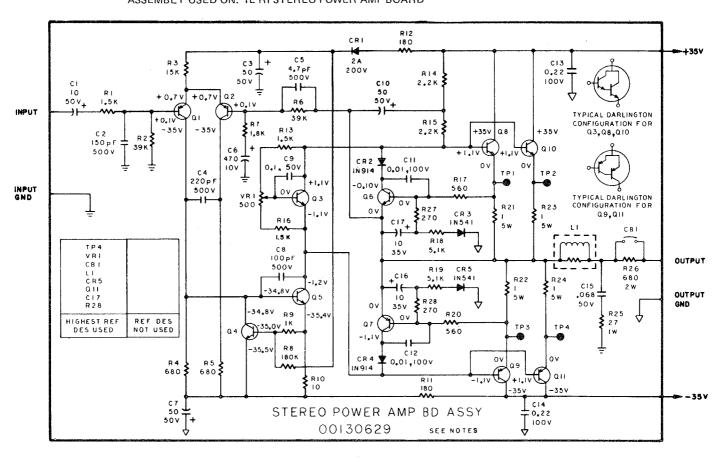
SWITCHES-OFF (OUT) POSITION.

VOLUME CONTROL-FULL CCW.

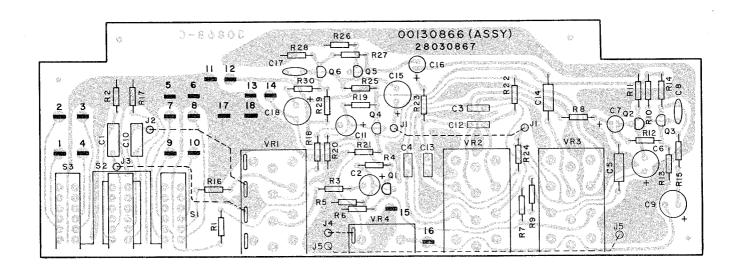
BALANCE, BASS AND TREBLE CONTROL-CENTERED.

FUNCTION SWITCH MODE-PHONO.

5. CAUTION: WHEN ORDERING PARTS REFER TO PARTS LIST FOR H/K PART NO. IF NOT AVAILABLE USE REF DES AND ASSEMBLY USED ON. IE RI STEREO POWER AMP BOARD

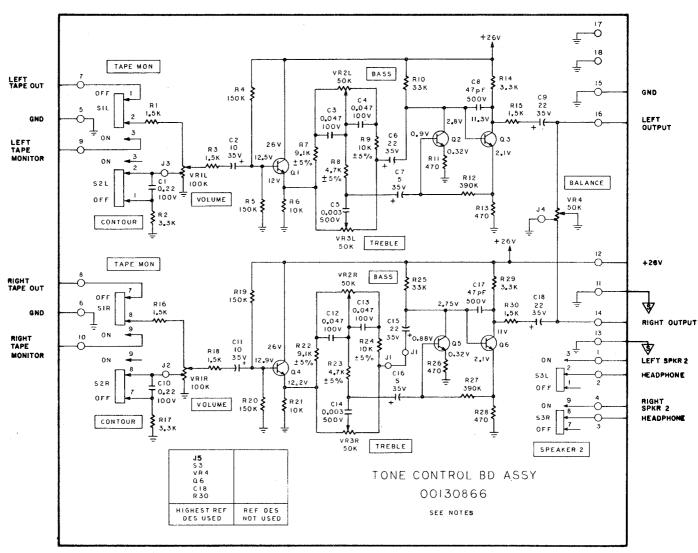


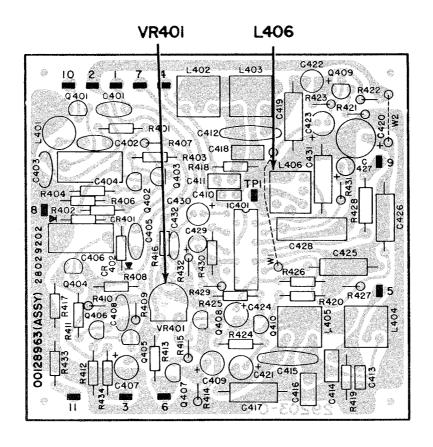
## VOLUME/MODE/SWITCH/TONE CONTROL PC BOARD, SCHEMATIC



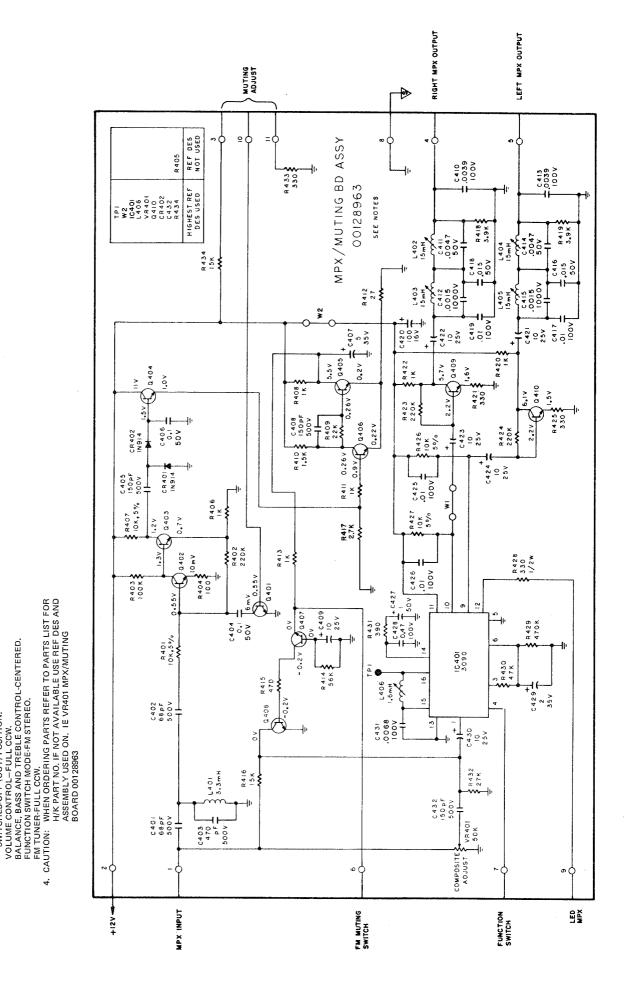
CIRCUIT REF. NO.	H/K PART NO.	DESCRIPTION
	00130866	PC Bd Assy, Volume/Mode/Switch/Tone Control
CAPACITOR, LYTIC C2, 11 C6, 9, 15, 18 C7, 16	31819165 31819166 31827109	10UF, 35V 22UF, 35V 5UF, 35V
TRANSISTOR Q1, 2, 3, 4, 5, 6	43025972*	NPN GP
CONTROL VR1 VR2, 3 VR4	23029027 23029029 21530909	Volume Bass & Treble Balance
<b>SWITCH</b> S1, 2, 3	25028939	Pushbutton, 4PDT

- 1. ALL CAPACITOR VALUES IN MICROFARADS
- 2. ALL RESISTOR VALUES IN OHMS, ±10%, 1/4W
- 3. ALL SWITCHES SHOWN IN OFF (OUT) POSITION.
- 4. MECHANICAL LINKAGE EXISTS BETWEEN THE FOLLOWING COMPONENTS: SIL & SIR, S2L & S2R, S3L & S3R, VRIL & VRIR, VR2L & VR2R, VR3L & VR3R.
- 5. CAUTION: WHEN ORDERING PARTS REFER TO PARTS LIST FOR H/K PART NO. IF NOT AVAILABLE USE REF DES AND ASSEMBLY USED ON. IE TONE CONTROL BOARD 00130866



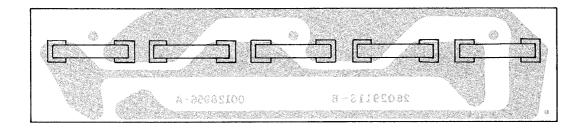


CIRCUIT REF. NO.	H/K PART NO.	DESCRIPTION
	00128963	PC Bd Assy, MPX/Muting
CAPACITOR, LYTIC C407 C409, 421, 422, 423, 424, 430, C420 C427 C429  POTENTIOMETER VR401	31827109 31819176 31819180 31819157 31827111	5UF, 35V 10UF, 25V 100UF, 16V 1UF, 50V 2UF, 35V 50K PIHER PT10
DIODE CR401, 402	41629338*	1N914
TRANSISTOR Q401 - Q410	43025972*	NPN GP
INDUCTOR L401 L402, 403, 404, 405 L406	12028060 12029348 12029349	3.3MH Variable 15MH Variable 1-3MH
INTEGRATED CIRCUIC401	JIT 43129350*	CA3090



1. ALL CAPACITOR VALUES IN MICROFARADS
2. ALL RESISTOR VALUES IN OHMS, ±10%, 1/4W.
3. MEASUREMENT INFORMATION
SPEAKER SWITCHES I & 2—ON (IN) POSITION.
HIGH CUT, FM MUTING, CONTOUR AND TAPE MONITOR
SWITCHES-OFF (OUT) POSITION.

#### **DIAL LIGHT BOARD**



**CIRCUIT REF. NO.** 

H/K PART NO.

**DESCRIPTION** 

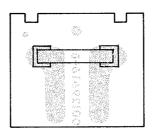
00128956

PC Bd. Assy. Dial Light

46529212\*

Lamp, Incandescent, Fuse Type, 12V, 150MA

**METER LIGHT BOARD** 



**CIRCUIT REF. NO.** 

H/K PART NO.

DESCRIPTION

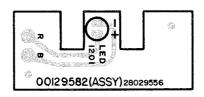
00129616

PC Bd. Assy. Meter Light

46529212\*

Lamp, Incandescent, Fuse Type, 12V, 150MA

LED LIGHT BOARD



**CIRCUIT REF. NO.** 

H/K PART NO.

**DESCRIPTION** 

00129582

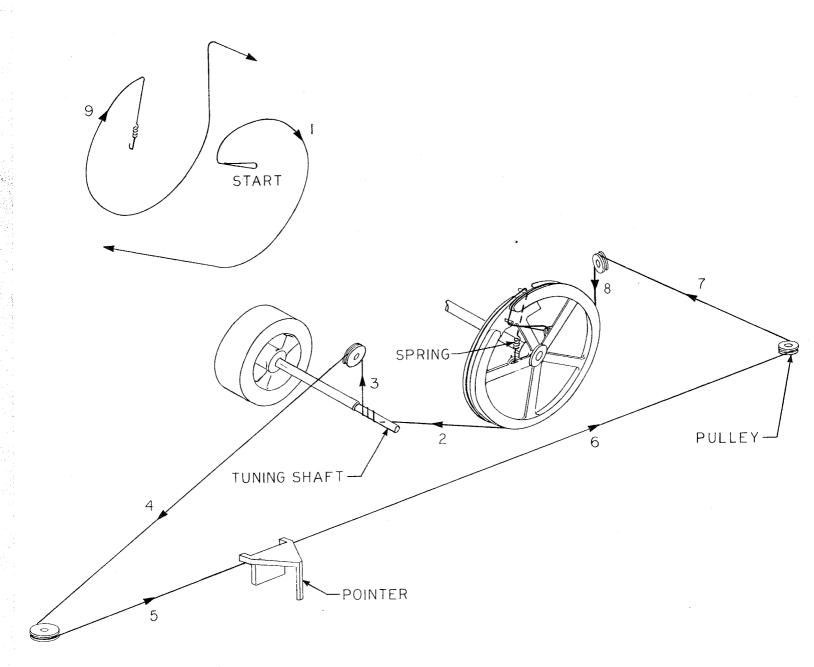
PC Bd. Assy. Led Light

LAMP

LED1201

46729554\*

LED



#### **CHASSIS PARTS LIST**

FIG. NO.	REF. DES.	H/K PART NO.	DESCRIPTION
REAR PANE	L	65428932	Terminal Strip,
nei		03420302	4 Position, Screw Type
Ref		65429098	Terminal Strip, 3 Position, Screw Type
Ref		65429087	Phono Jack Assy., Dual
I-1	VR1	21529274	Control, FM Muting, 1K, ¼W, AF
11-2	S2	24029081	Function Switch
Ref		65430907	Input Board Assy.
Ref		65429317	Phono Jack (P/O 65429087 & 65430907)
Ref		65416751	Receptacle, AC
11-7		65427001	Fuse Holder with
	•		Hdwr (Bus HTA)
11-6	F1	45022346*	Fuse, Slo-Blo,
			2 Amp, 3AG, 250V
1-2		60129790	Antenna Bracket
1-3	*	20529838	Antenna, Loopstick
I-4		61629867	Arm, Antenna Extension
Ref	R3	33312251	Resistor, 2.2M ohm, ±10%, 1/2W
			2.21VI OHIII, ±10%, 1/2VV
FRONT PAN	FI		
Ref	1 <b>L. J.</b>	60131630	Front Panel,
			Fabricated and Painted
Ref	S1	25028964	AC Power Switch
Ref		65428021	Jack, Phono and Tape
1-10		60429254	Tuning Shaft
Ref	DS1-DS5	46528051*	Function Lamp,
			Mura 12V, 60mA
Ref	M1	12528968	Tuning Meter
Ref		61629039	Dial Scale,
I-5		60729783	Plexiglas Molded Pointer, Painted
ESCUTCHEC	N ASSEMBLY		
Ref		00231640	Escutcheon Assy.
Ref		61631596	Escutcheon Plexiglas,
Ref		63029034	Upper Fab Panel Escutcheon Insert,
Ref		63032142	Bottom Fab Escutcheon Right
Ref		61632141	Panel Insert Function Panel
Ref		90432143	Window, Plexiglas Function Panel, Fab and
			Screened
Ref		63228698	Control Knob, Volume, Balance & Function
Ref		63228701	Tone Control Knob, Outer, Bass & Treble
Ref		63228702	Tone Control Knob, Inner, Bass & Treble
Ref		63228915	Tuning Knob
Ref		63228700	Pushbutton Knob
Ref		63228962	Pushbutton Knob,
			AC Switch

FIG. NO.	REF. DES.	H/K PART NO.	DESCRIPTION
CHASSIS AS	SEMBLY		
I-6	T1	10128960	Power Transformer
I-7		00329346	AM/FM Front End
1-9		60829328	Drive Pulley 89mm SD
11-4	C4	31525666	Capacitor, Lytic,
			470UF, 35V
11-5	C5	31519169	Capacitor, Lytic,
			3000UF, 50V
1-8	C6, 7	31130627	Capacitor, Lytic,
			13000UF, 40V
11-3	CR1	42129602	Diode Bridge,
			5 Amp, 100 PIV
I-11	L1	12029678	Inductor, Fixed 3UH
0.000			
MISCELLANI	EOUS	00000.0	
Ref		63632494	Walnut Cabinet,
			3 Sides and Bottom Strip
EXPORT			
1-6	T1	10131595	Power Transformer
I-1	S3	24031643	Switch, Multi Voltage
11-7	F1	45031050*	Fuse, Slo-Blo,
		.000,000	1 Amp, 3AG, 250V
			i Απρ, 3ΑΟ, 200 V

NOTE TO WARRANTY STATIONS: Items marked by asterisk (\*) are recommended spare parts stock. Printed circuit board assembly numbers are shown for reference only. Harman/Kardon does not normally supply assembled printed circuit boards.

NOTE: To speed handling of your order be sure to include both the model and serial numbers, in addition to the quantity, part number and part description of the items ordered. Orders from independent dealers, independent servicemen, and retail customers will be shipped on a cash in advance basis. Harman/Kardon reserves the right to substitute equivalent parts for those originally installed in this chassis. All parts should be ordered from Harman/Kardon, 55 Ames Court, Plainview, L.I., N.Y. 11803, Att: Parts Department.